

CLAIMS

1) Rigid Polyamide foam having a specific gravity of less than 0.5 g/cc.

5

2) A method for the production of Low Density Rigid Polyamide foam wherein the formulation is fed into an extrusion system; the formulation consisting of a polyamide, a functionalized polymer additive, a physical nucleator, and a physical blowing agent. The formulation is first melted and pressurized. The physical blowing agent is then injected and mixed. The homogenous melt is tempered and then pressure is released through a die orifice creating a useful shape.

10

3) The method of claim 2 wherein the amount of physical nucleator is between 0.1 and 3.0 percent by weight.

15

4) The method of claim 3 wherein the nucleator is polytetrafluoroethylene.

5) The method of claim 2 wherein the physical blowing agent is between 1% and 10%.

20

6) The method of claim 5 wherein the physical blowing agent is selected from a group consisting of hydrocarbons, hydrofluorocarbons, hydrochlorocarbons, hydrochlorofluorocarbons, argon, nitrogen, or carbon dioxide.

7) The method of claim 6 wherein the physical blowing agent selected is cyclopentane.

25

8) The method of claim 2 wherein the functionalized polymer is between 0.1 and 3.0%.

9) The method of claim 8 wherein the functionalized polymer chosen is Clariant CESA-EXTEND 1586.

30

10) The product of claim 1 wherein the polyamide foam is used to produce useful articles via profile extrusion.

11) The product of claim 1 wherein the polyamide foam is used to produce sheet, which is subsequently formed to produce useful articles.